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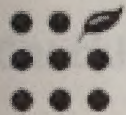
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Program of Research on the Economics of Invasive Species Management

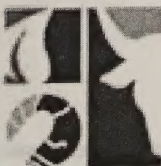
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CATALOGING PREP

Competitive Grants and Cooperative
Agreements Program: Description and
Application Process



Program Of Research On The Economics Of
INVASIVE SPECIES MANAGEMENT

Checklist

All proposals submitted under the Program of Research on the Economics of Invasive Species Management (PREISM) must contain the applicable elements described in this brochure. The following checklist has been prepared to assist in ensuring that the proposal is complete and in the proper order prior to mailing:

- ✓ **Application for Funding Cover Page**
 - Is all required information accurate and complete?
 - Has the Principal Investigator and the authorized organizational representative signed the Cover Page?
 - Does one copy contain pen-and-ink signatures?
 - Have you included a telephone number, fax number, and/or e-mail address where a message may be left for you?
 - ✓ **Table of Contents**
 - Are page numbers included for each item?
 - ✓ **Project Summary**
 - Has the Project Summary been included?
 - Do the name and institution of the Principal Investigator and co-investigators appear on the page, or on the following page?
 - Does it include research objectives?
 - Is it no more than 250 words?
 - ✓ **Project Description**
 - Is the project fully described?
 - Does this section adhere to the format and page limitations, as specified?
 - Does this section begin as page 1, as specified?
 - Does it contain a tentative schedule or workplan of major steps of study?
 - ✓ **Citations to Project Description**
 - Are all references cited?
 - Are all citations referenced?
 - Do all citations contain a title and are they in accepted journal format?
 - ✓ **Documentation from Collaborator(s), or Host Institution (where appropriate)**
 - ✓ **Vitae and Publications List(s)**
 - Are vitae included for the Principal Investigator and co-investigators, senior associates, and other key project personnel (including subcontractors—see instructions)?
 - Are the vitae current and pertinent?
 - Are the publications lists complete and limited to the last 5 years?
 - ✓ **Budget (form ARS-455)**
 - Are budget items complete?
 - Is the summary budget included?
 - Is the funding level total in line N within the stated limit of \$250,000 for the 3-year duration of the project proposal?
 - Is the budget duration within the stated limit of 3 years?
 - ✓ **Indirect Cost Rate Schedule**
 - For reimbursement of indirect costs, is a copy included of the applicant's indirect cost rate schedule that reports the applicant's federally negotiated audited rate?
 - ✓ **General**
 - Does the proposal conform to all format and page limitations and deadline requirements?
 - Are there an original and 12 copies?
 - Are all copies complete?
-

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Overview

Applications are invited for competitive grant and cooperative agreement awards from the United States Department of Agriculture (USDA) for fiscal 2003. This document provides background on the research areas of interest to the Program of Research on the Economics of Invasive Species Management (PREISM), application procedures, deadlines for submission, and guidance for the application process.

USDA's Economic Research Service (ERS) anticipates awarding approximately \$1.5 million in fiscal 2003 for competitive grants and cooperative agreements. ERS will accept proposals under this program for funding levels, inclusive of indirect cost when applicable, between \$50,000 and \$250,000 (for the duration of the grant and/or the cooperative agreement, not to exceed 3 years).

Authority

The authority for this program is contained in the Omnibus Budget Appropriations Act, Fiscal 2003 (P.L. 108-7). Proposals may be submitted by any State agricultural experiment station, college, university, other research institution or organization, Federal, State, or county agencies, private organization, corporation, or individual.

Applicable Federal Statutes, Regulations, and Guidelines

Applicable Federal statutes, regulations, and guidelines include the following: (a) guidelines to be followed when submitting grant proposals and cooperative agreements and rules governing the evaluation of proposals; (b) the USDA Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations, 7 CFR 3019; (c) the USDA Uniform Federal Assistance Regulations, 7 CFR Part 3015; (d) the USDA Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments, 7 CFR Part 3016; and (e) Cooperative Research Agreement 7 USC 3318b.

Priority Research Areas

ERS is accepting economic research proposals in three broad research areas of importance to USDA's invasive species policies and programs. The ERS program focuses on national decision making concerning invasive species of agricultural significance or affecting or affected by USDA programs. An "invasive species" is one that:

- Is non-native, alien, or exotic to the ecosystem under consideration and
- When introduced, causes or is likely to cause economic or environmental harm or harm to human health.

Proposals should focus on economic research, evaluation, modeling, and/or decision support system development that has direct implications for USDA policies and programs for protection from, control/management of, regulation concerning, or trade policy relating to invasive species. Anticipated funding in fiscal 2003 for competitive grants and cooperative research agreements will be approximately \$1.5 million.

The three Priority Research Areas listed below highlight economic research priorities identified by ERS, in consultation with USDA's Animal and Plant Health Inspection Service (APHIS) and other USDA agencies and offices with programs related to invasive species, as appropriate for competitive grants or cooperative agreements. ERS is especially interested in proposals for research with expected outcomes that include immediately useful, analytically-based principles or guidelines for invasive species policy/program decision making, decision support tools, and economic information or modeling systems that support the use of such principles, guidelines, or tools. The suggested topics and questions discussed below within each Priority Research Area are not meant to be exhaustive. Applicants may propose other topics within any of the Priority Research Areas, but they must provide persuasive justifications for those topics in their proposals.

Applicants may address multiple issues, but must specify one of the three priority research areas below:

I. The Economics of Trade and Invasive Species

- A. Economic evaluation of tariff and non-tariff barriers to trade in international agricultural markets
- B. Economic analysis of international rules and governance frameworks for invasive species regulation

II. Resource Implications of Invasive Species Policy and Program Alternatives

- A. Deriving economic implications of alternative approaches to invasive pest exclusion, surveillance, management, and/or compensation
- B. Illuminating tradeoffs and informing resource allocation options in the multi-program context
- C. Exploring the political economy and welfare implications of invasive species regulation

III. Bio-economic Integration and Risk Assessment

- A. Advancing the art and science of bio-economic modeling
- B. Externalities, public goods and nonmarket valuation in relation to invasive species
- C. Incorporating risk and uncertainty in economic decisions concerning invasive species

I. The Economics of Trade and Invasive Species

Trade in agricultural products has increased dramatically over the past decades as a result of worldwide demographic trends and economic growth, technological advances in transport, and changes in government trade policies. Population growth, urbanization, and income growth, particularly in developing countries, have led to increased global trade in both basic commodities and high-valued products. Containerization, air transport, refrigeration, and controlled atmospheric storage have also extended the reach of world commerce for an increasing number of products, particularly perishable commodities such as meats, fruits, and vegetables. Trade has also increased because government restrictions on trade have been reduced, primarily through multilateral and regional trade agreements, such as the WTO and NAFTA agreements. The deepening integration of markets for agricultural products is expected to continue, and possibly accelerate, as a result of continuing global trends that fuel the demand for food; innovations in transportation, communication, and information technologies; and ongoing government initiatives to lower barriers to trade still further.

Countries engage in mutually advantageous trade to enable them to use their limited productive resources more efficiently and thereby achieve a higher real national income than they could without trade. However, increased product trade may also increase the risk of introducing invasive species that can reduce or offset the gains from trade. The WTO, NAFTA, and other trade agreements negotiated by countries have therefore recognized the legitimate need for countries to adopt sanitary and phytosanitary (SPS) regulations, while establishing a framework to reduce their trade-distorting aspects. The framework is intended to increase welfare-enhancing trade primarily through requirements to use science as a basis for risk-management policies.

A. Economic Evaluation of Tariff and Non-tariff Barriers to Trade in International Agricultural Markets

International markets for agricultural products are affected by a complex mix of national trade policies and technical restrictions, such as tariffs and quarantine regulations. Current economic models which estimate the gains from trade that are likely to be realized from trade reforms (such as lowering tariffs) generally do not account for technical measures (such as invasive species regulations) or the hazards that these regulations target (such as an animal disease), both of which are likely to affect such estimates. We seek research that can lay a foundation for evaluating the full economic effects of trade reforms, or other economic factors that influence trade flows, given existing quarantine policies and distribution of IS hazards. This work should have conceptual, theoretical, and applied components, with the end goal of providing invasive species linkages that can be utilized in trade models. Of specific interest would be how the number of invasive species introductions and severity of damages might be associated with changes in the flows of traded goods. Research that includes discussion of policy linkages is strongly encouraged. Do changes in trade patterns stemming from trade reforms or changes in other economic factors affect the priority assigned to government efforts to prevent, control, or mitigate invasive species? More significant reductions in standard barriers to trade are generally achieved in regional, rather than multilateral trade agreements, with consequent changes in the patterns of trade due to trade expansion or trade diversion. Do regional trade agreements thus alter the priorities for invasive species policies and programs? Under what circumstances might regional invasive species policies be more economically rational than national-level controls? Under what circumstances can technical assistance targeting invasive species increase welfare-improving trade among regional trading partners?

Similarly, we are also interested in the development of analytical platforms for evaluation of the economic impacts of alternative invasive species regulations on producers and consumers, given current trade policies. Invasive species regulations may change for a number of reasons. If protection of environmental amenities is a function of income, countries may want to adopt more restrictive invasive species regulations as their economies grow. Countries may also choose to adopt more restrictive import protocols as a means of gaining or maintaining access to the markets of other countries. The need for tighter controls that affect trade could be signaled by disease or pest outbreaks. Diffusion of best regulatory practices through the international standards organizations may enable importers to design invasive species regulations that target hazards more precisely, thereby enabling more trade. We seek research that enables the full economic evaluation of the direct and indirect effects of IS regulations, including the costs of reduced trade, the benefits of invasive species prevention or mitigation, and the market benefits of consumer confidence (in the case of epizootic diseases). We encourage research that can evaluate such effects in global, as well as national markets. How might policy choices in other countries affect the imports, exports, or optimal invasive species policies in the home country? How might arbitrage opportunities in international commodity markets affect estimates of the costs and benefits of IS regulations?

B. Economic Analysis of International Rules and Governance Frameworks for Invasive Species Regulations

The WTO, NAFTA, and other trade agreements set out rules that govern the interface of trade and SPS regulations, including invasive species regulations. These rules rest on two premises: that basing domestic regulations on international norms will reduce conflicts and lower transactions costs to trade, and that requiring scientific justification for standards that deviate from these international norms increases the difficulty of using regulations as disguised restrictions on trade. To implement these agreements, the international community relies in part on standards-setting organizations, including the International Office of Epizootics (OIE) and the International Plant Protection Convention (IPPC), and also draws on the expertise of other international scientific bodies. Together, these agreements and institutions, along with their principles, rules, standards, and enforcement mechanisms, comprise the international governance framework for invasive species regulations. Government initiatives to further implementation of the principles and rules within this framework that are of greatest relevance to the regulation of invasive species should be informed by economic analysis that examines their costs and benefits from national and global perspectives. More specifically, we seek to fund research that addresses the following issues.

Adherence to the regionalization principle, as required by U.S. trade agreements, is a relatively recent innovation in risk management policy for invasive species. It is an integral part of a science-based approach to regulating trade, as invasive species and other SPS risks often do not correspond to political boundaries. The economic rationale for regionalization is that it can provide countries with an opportunity to export products from areas where animal or plant health risks are considered negligible, thereby benefiting consumers without jeopardizing the agricultural resource base in the importing country. Exports will often be contingent on adequate public sector investments in laboratory, inspection, monitoring, and certification infrastructure, as well as private mitigation actions. By ensuring that partial eradication or control leads to trade gains, regionalization may provide incentives for additional public and private investments in control measures. ERS encourages research that develops new conceptual, theoretical, and empirical approaches for estimating the costs and benefits of import protocols that allow trade from specifically delineated regions. To be most useful to USDA, results need to demonstrate broad economic considerations or yield

generalizable results. Empirical applications that model the public and private sector jointly engaged in regional pest and disease control would be especially useful.

Adoption of international standards as a means to harmonize SPS regulations is urged (but not required) by U.S. trade agreements. Since these trade agreements came into effect, a number of initiatives have been proposed by countries in different international fora to further the use of international standards. Yet, the normative basis for endorsement of the harmonization of invasive species and other regulations has not been closely examined. The international support for harmonization stems from repeated complaints by exporters that complying with divergent SPS measures substantially increased the transactions costs of trade. Harmonization can increase economic welfare if the resulting net gains from trade outweigh the net benefits of existing regulations. This outcome is more likely if the origins of regulatory heterogeneity are the result of chance events, information differences, or interest group capture. However, harmonization is likely to be inefficient if incomes, tastes, and risks are the primary sources of variation in national regulations. In these instances, other forms of regulatory rapprochement are likely to be more appropriate. ERS therefore seeks conceptual and empirical research on international standards for invasive species regulations that improve understanding of the conditions under which harmonization is likely to enhance welfare. We would also be interested in funding research that could provide guidance for USDA recommendations for the creation or modification of OIE or IPPC standards that benefit U.S. producers and consumers as well as the global trading system.

II. Resource Implications of Invasive Species Policy and Program Alternatives

Under a range of authorities from statutes dating back to the Plant Quarantine Act of 1912, the Secretary of Agriculture sets policy concerning the importation of fruits, vegetables, propagative material, logs, lumber and unmanufactured wood, and live animals and animal products. These policies are implemented largely under programs of the USDA's Animal and Plant Health Inspection Service (APHIS), which operates quarantine programs and coordinates with the Department of Homeland Security in providing border protection consistent with those quarantine regulations. In addition to the agency's participation in invasive species exclusion activities, APHIS has primary responsibility for domestic monitoring and surveillance programs aimed at detecting any breach of quarantines, and designing and implementing emergency response and longer term invasive pest eradication, control, and management programs when invasive pests are detected in the United States.

A. Deriving Economic Implications of Alternative Approaches to Invasive Pest Exclusion, Surveillance, and Management

Each programmatic goal in protecting U.S. agricultural and natural resources from invasive species can be carried out in a variety of different ways, the choice of which is informed by economic analysis. In general, we might ask how, given uncertainty, economics can provide guidance on how to enhance effectiveness and efficiency, and prioritize governmental efforts within each goal area (exclusion, monitoring/surveillance, or management/control). More specifically, we seek to fund research that addresses the following questions.

What are the implications of decision making and decision rules under different frameworks, such as risk, uncertainty, or ignorance, in their specific application to invasive species exclusion, monitoring/surveillance, and/or management/control decisions?

In considering how to exclude invasive species carried through commerce or travel, what are the circumstances under which benefits and costs would favor: technical assistance in inva-

sive species' countries of origin; regulations requiring offshore control as a condition of entry for imports; sampling (at various intensities with alternative goals) at the border; or predicated action on the detection of a new invasive species in the United States?

In designing domestic programs for monitoring and surveillance of invasive species, how can economic considerations provide guidance on how to allocate scarce program resources among multiple sites and/or multiple invasive species. Here we are particularly interested in funding the development of decision support tools that are practical at the operations level. Also, we would be interested in funding research to show if and how sampling mode, effort, and intensity issues might be informed by the costs and benefits of alternative surveillance/sampling frameworks.

How can economic dimensions of invasive species emergencies be incorporated into rapid response plans to eradicate or prevent detected invasive species' spread or establishment? Reactions to invasive species emergencies cannot await a lengthy economic analysis. What other decision support tools could be developed to minimize the likelihood that emergency response plans might have unintended economic consequences and maximize the likelihood that response measures are efficient?

Various incentive, indemnity, or other compensation schemes are often needed to obtain cooperation from private landowners whose actions affect the spread of an invasive species, or to compensate private entities for mandatory destruction of private (infested or diseased) property for the public good. Designing incentives or compensation schemes and setting levels within those schemes to obtain the desired behavioral response are inherently economic problems, often involving the potential for moral hazard or unintended consequences. What are the economic implications of utilizing insurance, regulation with indemnity, voluntary incentives, or other approaches to obtain needed behavioral response? What concepts can guide structure and level-setting within any or all such alternative approaches? How are assets appropriately valued in indemnity or compensation schemes? And how do nonmarket values get incorporated into providing appropriate incentives involving privately controlled resources that do not have commercial value?

B. Illuminating Tradeoffs and Informing Resource Allocation Options in the Multi-program Context

The research questions described in part A involved efficient and effective choice of alternative modes for meeting a particular goal concerning invasive species. In this second set of issues, we seek proposals that make clear the tradeoffs and resource allocation implications of looking across various goals and the public programs that address them. The overriding question concerns the circumstances under which economics suggests to program decision makers the particular point of intervention (e.g., invasive species exclusion, versus monitoring and detection plus emergency response, versus adapting to a new invasive species). As the following specific examples indicate, this can have temporal, spatial, or multi-objective dimensions.

How do economic concepts suggest that limited USDA program resources be allocated among exclusion, monitoring, and/or control, both offshore and domestically, and decisions to ban or permit imports or require particular control measures as a condition of entry? What are the economic tradeoffs? We would especially like to see conceptual insights incorporated into a practical decision tool.

For any program goal or goals, can economic research inform the development of rules of thumb or formal tools that efficiently allocate program resources among alternative invasive

pest types, pathways by which invasive species could enter the U.S., commodities affected by or acting as conduits for invasive species entry, or types of consequences (eg: environmental and commercial)?

When and under what circumstances do economic considerations suggest that programs be terminated or shifted to an alternative program goal? For example, when would it be efficient to abandon a public eradication effort and replace it with an invasive species management program? How does economics figure into the sequential aspects of invasive pest arrival, entry, and establishment?

C. Exploring the Political Economy and Welfare Implications of Invasive Species Regulation

Exploring in an objective and systematic manner who the stakeholders are in invasive species regulation, what rents they seek, and how they interrelate with one another and the public sector, could be enormously helpful in crafting long-term strategies for more efficient regulation. In addition to some general investigation on this subject, we seek especially research that can answer the following questions.

When considering the distribution as well as the absolute level of benefits and costs of invasive species regulation, what metrics can be used to judge program effectiveness?

Is there a typical distribution of benefits and costs associated with past invasive species regulatory decisions? What do any observed patterns suggest for enhanced future decision making?

How are U.S. consumers affected by domestic regulations addressing invasive species threats? Under what conditions do consumers benefit? Under what conditions is there a tradeoff between producer and consumer well-being?

In what ways might the Federal or State governments deal with the property rights issues associated with suppressing/eradicating invasive species that have hosts in non-agricultural areas? Examples include the urban/agriculture conflicts of eradicating citrus canker in Florida, medflies in California.

III. Bio-economic Modeling and Risk Analysis

Bio-economic modeling and risk analysis are among the tools that are most useful in supporting domestic and trade-related policy and program decisions involving invasive species.

A. Bio-economic Modeling

Biology and economics play key roles in the arrival of foreign pest species and in the processes by which they become invasive. Economic activities related to international trade, commodity production, and domestic commerce are major pathways by which foreign pests penetrate U.S. borders and then disperse to new areas. At the same time, to become established in new areas, pests require suitable habitats, compatible climatic conditions, and minimal predator pressures. Pests that become established on a scale sufficient to threaten some subset of the food, fiber, nursery, or agri-natural resources sectors with measurable economic losses are considered invasive. ERS wishes to support research that improves USDA's ability to account for the biological and economic factors that jointly determine how invasive species, crop and livestock ecosystems, and human economic activities interact in assessing the economic implications of invasive species and their control strategies.

Research is encouraged in the area of developing new conceptual and empirical approaches that link spatially based plant pest or animal disease spread models with agricultural sector models. Such approaches might demonstrate how production systems and market impacts change as pests spread, establish economic and/or biological thresholds for alternative control strategies, or indicate conditions favoring the success or failure of different policy responses. To be most useful for USDA program and policy purposes, approaches need to demonstrate a broad applicability to invasive species issues and yield results that generalize in their validity. Empirical applications that show how a new method can be used to aid risk assessment, priority ranking, or resource allocation decisions across a set of invasive species are welcome.

Research is also needed in areas that will advance the ability of USDA to conduct regulatory impact analyses. In addition to developing the new approaches discussed above, research targeted at improving regulatory assessment processes is encouraged. For example, assessing the economic impacts of a proposed regulation often requires comparing costs and benefits that occur over a period of years—or even decades. The wide variety of species, commodities, producers, and problems encompassed by invasive species suggests that the appropriate discount rate to use in these comparisons may differ across assessments. The regulatory assessment process would benefit from an economically justifiable framework or criteria set to aid in making internally consistent choices regarding discount rates and other critical economic parameters and variables.

B. Externalities, Public Goods, and Non-market Valuation

The economic impacts associated with invasive species and/or measures to control them often include a variety of externalities, public goods, and other impacts that are not valued in formal economic markets. For example, invasive weeds like leafy spurge and purple loosestrife (both targets of ARS- and APHIS-funded biocontrol programs) crowd out native vegetation on millions of acres of grassland and wetland ecosystems. These weeds then not only reduce the forage available for livestock but also decrease the quantity of food, shelter, and space available for native species. The costs of infestations of these weeds then include reduced stocks of native species and the diminished integrity of native ecosystems. In a few cases, such as with the prion believed to cause mad cow disease, invasive species may pose serious human health threats. For these pests, the benefits of exclusion and/or containment include the peace of mind that people receive by knowing that the domestic food supply is free of the associated health problems.

While often acknowledged to be significant in magnitude, the nonmarket impacts associated with invasive species and related control activities may not be incorporated into economic assessments. ERS encourages research on adapting nonmarket valuation techniques to improve invasive species risk assessment and inform invasive species regulatory decision making.

C. Uncertainty and Risk Analysis

Uncertainty and risk assessment are central to the processes of evaluating, prioritizing, and responding to threats posed by invasive species. The state of invasive species risk assessment, however, is such that it is often difficult to make credible quantitative projections of whether or not a species will become established, and if it does, what the extent of the associated economic and environmental impacts will be.

ERS encourages research leading to outputs that would allow uncertainty and risk to be incorporated better in economic analyses of, and decision-making related to, invasive species. For example, given the many types of economic and environmental risks associated

with different invasive species, there is a need for a formal structure that aggregates these risks in such a way as to yield a transparent and economically rational prioritization of species by overall level of concern. Especially needed is the development of tools that permit sound economic input to be incorporated into pest risk analysis that may not be performed by economists. Another need is for additional work in the area of developing alternative public sector and market-based response strategies for managing the risks associated with invasive pests. For example, are there conditions that favor or hinder the use of commodity insurance programs as an alternative to indemnity payments as a means of helping farmers cover the economic risks associated with programs to eradicate invasive pests?

Eligibility Requirements, Award Types, and Indirect and Other Costs

The Program of Research on the Economics of Invasive Species Management (PREISM) may award competitive grants or cooperative agreements under this announcement. **Applicants need not specify the type of award in their proposal. PREISM reserves the right to determine the type of award.** The type of award made for a selected proposal will be governed by the nature and degree of involvement desired by PREISM in the project and the type of institution requesting funding (see "Authority," page 1). In accordance with Federal statutes, the amount of indirect cost ERS will pay is governed by the type of award and the type of institution receiving the award.

Proposals may be submitted by any State agricultural experiment station, college, university, other research institution or organization, Federal, State, or county agencies, private organization, corporation, or individual. Proposals submitted by non-United States organizations will not be considered.

The research proposed must be specifically designed for the three Priority Research Areas described previously. Proposals may include requests for conferences that bring together members of the interested research community to identify research needs, update information, or advance an area of research recognized as an integral part of the research effort.

Types of Awards

- **Competitive Grants:** Competitive grants will be supported when the research topic does not require substantial involvement between ERS staff and the recipient during the performance of the award.
- **Cooperative Agreements:** Cooperative agreements will be supported when the research topic requires more substantial involvement between ERS and the investigator(s). There are two types of cooperative agreements: cooperative research agreements and assistance-type cooperative agreements. In a cooperative research agreement, ERS staff and extramural researchers are close collaborators and contributors to support the research; in an assistance-type cooperative agreement the extramural researchers are responsible for conducting the greater part of the work on the project. Cooperative research agreements require both parties to contribute to the funding of the project; assistance-type cooperative agreements do not have this joint funding requirement.

Indirect and Other Costs

Federal statutes dictate the amount of indirect costs that ERS pays by type of award and institution. In cooperative research agreements, ERS pays: no indirect costs to State cooperative institutions (i.e., land-grant universities and their constituent schools and departments); the negotiated indirect cost rate not to exceed 10 percent of total direct costs to nonprofit institutions other than State cooperative institutions; and the negotiated indirect cost rate not to exceed the audited rate of any federally recognized audit agency to other institutions. In competitive grants and assistance-type cooperative agreements, ERS pays the negotiated indirect cost rate not to exceed the audited rate of any federally recognized audit agency to State cooperative institutions and institutions other than State cooperative institutions and nonprofit institutions; and the negotiated indirect cost rate (no statutory limitation) to nonprofit institutions other than State cooperative institutions. For reimbursement of indirect costs, the applicant must include a copy of its indirect cost rate schedule with the application. Tuition shall be treated as an allowable cost, subject to negotiation, where reimbursement of such costs are not prohibited by law.

Peer Review of Applications

All proposals received will be acknowledged. If you do not receive an acknowledgment within 30 days of the submission deadline, please contact the PREISM office at (202) 694-5112 or e-mail: PREISM@ers.usda.gov.

Prior to technical examination, a preliminary review will be made for responsiveness to the three Priority Research Areas (for example, relationship of the proposal to one of the three research areas and proposed requirements). Proposals that do not fall within the guidelines as stated in this document will be eliminated from program competition, and the applicant will be notified in writing.

Peer review panels will be convened to review proposals in each research area. All applicants will be notified in writing by October 31, 2003, as to whether their proposal has been accepted for an award by PREISM.

Peer review panel members will be selected based upon their training and experience in relevant research or technical fields, taking into account the following factors:

- The level of formal social science or technical education and other relevant experience of the individual as well as the extent to which an individual is engaged in relevant research and other relevant activities;
- The need to include as peer reviewers experts from various areas of specialization within relevant social science or technical fields;
- The need to include as peer reviewers experts from a variety of organizational types (for example, universities, industry, private consultant(s), and geographic locations); and
- The need to include as peer reviewers individuals with relevant program knowledge and experience.

During the peer evaluation process, extreme care will be taken to prevent any actual or potential conflicts of interest that may have an impact on review or evaluation. Names of submitting institutions and individuals, as well as proposal content and peer evaluations, will be kept confidential.

Evaluation Factors and Criteria

The proposal evaluation process includes both internal staff review and evaluation by peer review panels with members drawn from universities, industry, private consultants, and government officials. Peer review panels will be selected and structured to provide expertise and objective judgment in the evaluation of the proposals.

The peer review panel will use the following criteria and weights to evaluate proposals (100 points total):

Research Merit of the Proposal (weight: 35 points)

This criterion is used to assess the conceptual adequacy of the hypothesis or research question or information needed, the clarity and delineation of objectives, the adequacy of the description of the undertaking, and how the anticipated results will advance policy knowledge and the development and implementation of programs. Background information should be brief for proposals that address one of the topics described on pages 2-9; a more extensive justification is needed for a proposal with a nonlisted topic.

Overall Approach (weight: 30 points)

This criterion relates to the probability of success of project; time allocated for systematic attainment of objectives; analytic approach; and research design, appropriateness of data, and suitability and feasibility of methodology.

Workplan, Budget, and Cost-Effectiveness (weight: 20 points)

This criterion relates to the extent to which the total budget adequately supports the project and is cost-effective. Reviewers will evaluate if the workplan is reasonable and sufficient to ensure timely implementation and completion of the study. The workplan should also provide evidence of the adequacy of available or attainable support personnel, facilities, and instrumentation. When achievement of the workplan requires collaboration, evidence is needed of the adequacy of support from and commitment to cooperation from any collaborative organization.

Key Personnel (weight: 15 points)

This criterion relates to the adequacy of the number and qualifications of the key persons who will carry out the project.

How To Obtain Application Materials

PREISM is using the Internet for primary distribution of information and application materials for its Competitive Grants and Cooperative Agreements Program. Please note that this document, with a downloadable budget form, is available on the PREISM website at <http://www.ers.usda.gov/briefing/InvasiveSpecies/funding>. Photocopies of materials and the budget form (ARS-455) are acceptable. Paper copies may also be requested from:

Economic Research Service, USDA
PREISM Business Office
1800 M Street, NW, Room S3118
Washington, DC 20036-5831
Telephone: (202) 694-5112
Fax: (202) 694-5936
E-mail: PREISM@ers.usda.gov

Application Process

Overview

These guidelines are provided to assist you in preparing a proposal to the Competitive Grants and Cooperative Agreements Program of the Program of Research on the Economics of Invasive Species Management. Please read these guidelines carefully before preparing your submission.

A checklist is provided at the beginning of this document to help you provide the necessary information for completing a proposal. A budget form ARS-455 is required for the proposal, and it may be obtained using the Internet or by requesting a paper copy; contact information is provided on page 13.

Submission Requirements

The purpose of a grant or cooperative agreement proposal is to persuade PREISM and members of the invasive species research community who provide advice to PREISM that the proposed project is important, methodologically sound, and worthy of support under the criteria listed on page 12. Therefore, the proposal must be submitted in response to one of the three Priority Research Areas (page 2). The application should be self-contained, should clearly present the merits of the proposed project, and should be written with care and thoroughness. It is important that all essential information for comprehensive evaluation be included. Omissions often result in processing delays and may jeopardize funding opportunities.

In preparing the proposal, applicants are urged to ensure that the name of the Principal Investigator and, where applicable, the name of the submitting institution are included on the Application for Funding Cover Page and **at the top of each page**. This will permit easy identification in the event that the application becomes disassembled during the review process.

Format and Contents of Proposals

Application for Funding Cover Page

Each copy of the proposal must contain an Application for Funding Cover Page. This is designed by the applicant but must be the first page of the application. At least one copy of this information must contain pen-and-ink signatures as outlined below. In completing this cover page include the following information:

- *Title of Proposal.* The title of the proposal must be brief (80-character maximum), yet represent the major thrust of the project. Because this title will be used to provide information to those who may not be familiar with the proposed project, highly technical words or phraseology should be avoided where possible. In addition, phrases such as “investigation of” or “research on” should not be used.
- *Program to Which You Are Applying.* “PREISM”
- *Priority Research Area.* Choose the Priority Research Area that is most appropriate to the research being proposed (i.e., economics of trade and invasive species, resource implications of invasive species policy and program alternatives, bio-economic integration and risk assessment). It is important that only one research area be selected. When the appropriateness of the chosen research area may be in question, the final program area assignment will be made by the PREISM staff. The Principal Investigator will be informed of any changes in assigned research area.

- *Principal Investigator/Project Director.* List the name of the proposing Principal Investigator; there can be only one Principal Investigator or Project Director, who must sign the Application for Funding Cover Page. If the proposal has one or more co-investigator(s), all must be listed (signatures of co-investigators are not required) on the Application for Funding Cover Page. Co-investigators should be limited to those required for major research collaboration; minor collaborators or consultants are more appropriately designated as collaborators (see page 17). Only the Principal Investigator listed will receive direct correspondence from PREISM.
- *Type of Institution.* Identify the institution type of the Principal Investigator (awards can be to only one institution or individual); no other designation is accepted: Hispanic-Serving Institution, Land-Grant 1994 (Tribal Colleges and Universities), Land-Grant University 1862, Land-Grant University 1890 or Tuskegee University, Public University or College (Non-Land Grant), Private University or College, Cooperative Extension Service, State Agricultural Experiment Station, USDA/REE Laboratory, Other Federal Research Laboratory, State or Local Government, Minority-Owned Business, Female-Owned Business, Small Business, Private Profit-Making, Private Nonprofit, Individual, Other (specify). Contact your institution's business office if you have any question regarding the proper identification of type of institution.
- *Telephone Numbers.* Please list the telephone and fax numbers and the e-mail addresses (if available) of the Principal Investigator and co-investigators. In addition, please include a telephone number where a message can be left, if different from above.
- *Signatures.* Sign and date the Application for Funding Cover Page. All proposals must be signed by the proposing Principal Investigator and, for those proposals being submitted through institutions or organizations, endorsed by the authorized organizational representative who possesses the necessary authority to commit the applicant's time and other relevant resources. The Principal Investigator, who signed the Application for Funding Cover Page, will be listed on the grant or cooperative agreement award document in the event that an award is made. Proposals that do not contain the signature of the authorized organizational representative cannot be considered for support.

Table of Contents

A Table of Contents, itself unpaginated, should be placed immediately after the Application for Funding Cover Page. This table should direct the reader to the pages for all sections of the proposal, beginning with the Project Description on page 1.

Project Summary

The proposal must contain a Project Summary, and must be assembled as the third page of the proposal (immediately after the Table of Contents) and should not be numbered. The names and institutions of the Principal Investigator and all co-investigators should be listed on the summary page (if space is insufficient, please use a separate sheet immediately following the Project Summary in the proposal). The Project Summary is limited to 250 words. The summary is not intended for the general reader; consequently, it may contain technical language comprehensible by persons in disciplines relating to the food and agricultural sciences. The project summary should be a self-contained, specific description of the activity to be undertaken and should focus on:

- Overall project goal(s) and supporting objectives; and
- Plans to accomplish project goal(s).

The importance of a concise, informative project summary cannot be overemphasized.

Project Description

The written text may not exceed 15 pages (whether single- or double-spaced) of written text and may not exceed a total of 20 pages including figures and tables. The proposal should be assembled so that the Project Description immediately follows the Project Summary. To clarify page limitation requirements, page numbering for the Project Description should start with 1, and should be placed on the bottom of the page. The 15-page limitation does not include figures, tables, or attachments such as a survey instrument (if relevant). All proposals are to be submitted on standard 8½" x 11" paper. In addition, margins must be at least 1 inch, type size must be 12 point (equivalent to this size for some printers is 10 pitch or 10 characters per inch, which is also acceptable), there should be no more than six (6) lines per inch, and there should be no page reductions. The project description must contain the following components:

- *Introduction.* A clear statement of the long-term goal(s) and supporting objectives or research questions of the proposed project should be included. The most significant published work in the field under consideration, including the work of key project personnel on the current application, should be reviewed. The current status of research in this field should also be described.
- *Rationale and Significance.* Concisely present the rationale behind the proposed research. The objectives' specific relationship to the potential long-term improvement in the efficiency of the USDA's invasive species programs should be shown clearly. These purposes are described under Priority Research Areas on page 2. Any novel ideas or contributions that the proposed project offers should also be discussed in this section.
- *Research Methods.* The hypotheses or questions being asked and the methodology being applied to the proposed project should be stated explicitly. Specifically, this section must include:
 - A description of the research proposed in the sequence in which it is to be performed;
 - Techniques to be used in carrying out the proposed project, including the feasibility of the techniques;
 - Explanation of data collection methods, including interviewer training, sample design and selection, and measures for obtaining adequate response rates (for proposed projects that plan to collect survey data);
 - Results expected;
 - Means by which data will be analyzed or interpreted;
 - Discussion of relevant variables and of model specification issues (for proposed projects that plan to use multivariate analysis);
 - Possible application of results;
 - Pitfalls that may be encountered;
 - Limitations to proposed procedures; and
 - A tentative schedule or workplan for conducting major steps of study.

In describing the research plan, the applicant must explain fully any materials, procedures, situations, or activities that may be hazardous to personnel (whether or not they are directly related to a particular phase of the proposed project), along with an outline of precautions to be taken to avoid or mitigate the effects of such hazards.

Note: The sections detailed below are not included in the page limitations for the Project Description section.

Citations to Project Description

All references cited should be complete, including titles and all co-authors, and should conform to an accepted journal format.

Collaborative Arrangements

If the nature of the proposed project requires collaboration or subcontractual arrangements with other research scientists, corporations, organizations, agencies, or entities, the applicant must identify the collaborator(s) and provide a full explanation of the nature of the collaboration. Evidence (that is, letters of intent) should be provided to assure peer reviewers that the collaborators involved have agreed to render this service.

When a project requests funds for multiple institutions, a lead institution must be designated. Only one proposal may be submitted for the project and only from the lead institution. Other institutions may be designated as subcontractors. Proposals with Application for Funding Cover Pages from more than one institution are not permitted and will be returned without review. Identical proposals submitted by different investigators from different institutions are also not permitted and will be returned without review.

Vitae and Publications List(s)

To assist peer reviewers in assessing the competence and experience of the proposed project staff, all personnel who will be involved in the proposed project must be identified clearly. For the Principal Investigator and each co-investigator listed on the Application for Funding Cover Page, for all collaborators and other senior personnel who expect to work on the project in a significant fashion (for instance, expectation of co-authorships on ensuing publications) whether or not funds are sought for their support, and for all subcontractors, the following should be included:

- *Curriculum Vitae (CV)*. The curriculum vitae should be limited to a presentation of academic and research credentials, such as educational, employment, and professional history, honors, and awards. The vitae shall be no more than two pages each in length, excluding publications listings; and
- *Publications List(s)*. A chronological list of all publications in refereed journals during the past 5 years, including those in press, must be provided for each professional project member for whom a curriculum vitae is provided. Also list only those non-refereed technical publications relevant to the proposed project. All authors should be listed in the same order as they appear on each paper cited, along with the title and complete references as these usually appear in journals.

Budget (Form ARS-455)

A summary budget is required detailing requested support for the overall project period, which is not to exceed 3 years. Funding levels accepted are between \$50,000 and \$250,000, inclusive of indirect cost where applicable, for the duration of the project.

Funds may be requested under any of the budget categories listed, provided that the item or service requested is identified as necessary for successful conduct of the proposed project, allowable under applicable Federal cost principles, and not prohibited under any applicable Federal statute or regulation.

Budget items include:

- Salaries and wages
- Nonexpendable equipment
- Materials and supplies
- Travel
- Publication costs/page charges
- Computer costs
- Other direct costs
- Indirect costs
- Cost sharing (ignore this category, may be requested later for cooperative agreements)

Salaries of faculty members and other personnel who will be working on the project may be requested in proportion to the effort they will devote to the project.

See page 13 to obtain a paper copy or an electronic copy.

Indirect Cost Rate Schedule

For reimbursement of indirect costs, the applicant must include with the application a copy of its indirect cost rate schedule that reports the applicant's federally negotiated audited rate.

Current and Pending Support

The information in this section of the proposal provides reviewers with an opportunity to evaluate the contribution the proposed work will make to the investigators' overall research program.

The proposal must list any other current public or private research support (including in-house support) to the Principal Investigator or co-investigators listed on the Application for Funding Cover Page, whether or not salary support for the person(s) involved is included in the budget. PREISM must be informed of changes in pending grant support that arise after the proposal has been submitted. Nonflexible funds—including Principal Investigator and support staff salaries, office space, and other indirect costs—may be excluded when these funds are received through a noncompetitive process. Analogous information must be provided for any pending proposals, including this proposal, that are now being considered by, or that will be submitted in the near future to, other possible sponsors, including other USDA programs or agencies. Note that this proposal must be listed as Pending. In addition to completing the information, Investigators also should include a brief statement of research objectives or project summaries for all projects listed in Current and Pending Support. Concurrent submission of identical or similar proposals to other possible sponsors will not prejudice proposal review or evaluation by PREISM or experts engaged by PREISM for this purpose. However, a proposal that duplicates or overlaps substantially with a proposal already reviewed and funded (or that will be funded) by PREISM will not be funded under this program.

Please include the following information under the heading "Current and Pending Support."

- Record information for active and pending projects in separate sections by name, supporting agency, total funding amount, effective and expiration dates, percentage of time committed, and title of project.
- All current research to which the Principal Investigator, co-investigators, and other senior personnel have committed a portion of their time must be listed, whether or not salary for the person involved is included in the budgets of the various projects.

Additions to Project Description

Each project description is expected to be complete without the need to refer to additional materials. However, additions to the Project Description (appendices) are allowed if they are directly germane to the proposed research. These may include reprints (papers that have been published in peer-reviewed journals) or preprints (manuscripts in press for a peer-reviewed journal must be accompanied by letter of acceptance from the publishing journal).

Manuscripts sent in support of the proposal should be single-spaced and printed on both sides of the page. Each manuscript must be identified with the name of the submitting organization, the name of the Principal Investigator, and the title of the proposal, and be securely attached to each copy of the proposal. Staff of PREISM will not collate applicant proposals or proposal addenda.

Information may not be appended to a proposal to circumvent page limitations prescribed for the project description. Extraneous materials will not be used during the review process.

What/Where To Submit

An original and 12 copies of the application are required. Due to the volume of proposals that are expected and the difficulty in identifying proposals submitted in several packages, all copies of each proposal must be mailed in a single package. In addition, please ensure that each copy of the proposal is stapled securely in the upper left-hand corner.

Every effort should be made to ensure that the proposal contains all pertinent information when originally submitted. Prior to mailing, it is urged that the proposal be compared with the checklist on the inside front cover of this announcement.

To ensure prompt receipt of submitted proposals, use First Class or Express mail, or a courier service. To be considered for funding this fiscal year, proposals (an original and 12 copies) must be transmitted by June 2, 2003 (as indicated by postmark or date on courier bill of lading). Late proposals will not be considered. Electronic or fax submissions will not be accepted.

Address for Submitting Proposals:

Economic Research Service, USDA
PREISM Business Office
1800 M Street, NW, Room S3118
Washington, DC 20036-5831

Proposal Disposition

PREISM will select those proposals that will be offered an award based upon peer review, research priorities, and the availability of funding.

PREISM reserves the right to negotiate with the Principal Investigator or project director and/or with the submitting organization or institution regarding project revisions (for example, reductions in the scope of work), funding level, or period or method of support prior to recommending any project for funding.

A proposal may be withdrawn by the Principal Investigator at any time before a final funding decision is made regarding the proposal; however, withdrawn proposals normally will not be returned. One copy of each proposal that is not selected for funding (including those that are withdrawn) will be retained by PREISM for a period of one (1) year. The remaining copies will be destroyed.

Duration of Awards

The total period for which a grant or cooperative agreement is awarded may not exceed 3 years.

Management Information

Once a grant or cooperative agreement has been reviewed and recommended for funding, specific management and organizational information relating to the applicant shall be requested on a one-time basis prior to the award. Copies of forms needed in fulfilling the requirements will be provided by the PREISM office.

Notice of Award

A competitive grant or cooperative agreement award document, containing the budget, terms and conditions of the award, and other necessary information, will be prepared and forwarded to each grantee or cooperator, along with a Notice of Competitive Grant or Cooperative Agreement Award, by the Administrative and Financial Management, ARS, USDA.

Financial Obligations

For any competitive grant or cooperative agreement awarded, the maximum financial obligation of ERS shall be the amount of funds authorized for the award. This amount will be stated on the award instrument and on the approved budget. However, in the event an erroneous amount is stated on the grant award instrument, the approved budget, or any supporting document, ERS reserves the unilateral right to make the correction and to make an appropriate adjustment in the amount of the award to align with the authorized amount.

Nothing in these guidelines or any program announcement shall obligate ERS, the Department, or the United States to take favorable action on any application received in response to any announcement, or to support any project at a particular level. Further, neither the approval of any application nor the award of any project grant or cooperative agreement shall commit or obligate the United States in any way to make any renewal, supplemental, continuation, or other award with respect to any approved application or portion of an approved application.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
JANUARY 1964

TO THE HONORABLE CHAIRMAN OF THE BOARD OF TRUSTEES
OF THE UNIVERSITY OF CHICAGO
FROM THE DEPARTMENT OF CHEMISTRY

RE: A REPORT ON THE PROGRESS OF THE RESEARCH
PROGRAM IN THE DEPARTMENT OF CHEMISTRY
DURING THE YEAR 1963

1. The Department of Chemistry has been fortunate in having
received a grant from the National Science Foundation
for the year 1963.

2. The grant was used to support the following research
programs:

(a) The study of the reaction of the methyl
radical with molecular oxygen.

Post-Award Administration

Awardees will be required to ensure that all funds are expended in accordance with the terms and conditions of grant or cooperative agreement award, Departmental regulations, and the applicable Federal cost principles in effect on the date of the award. Responsibility for the use and expenditure of grant or cooperative agreement funds may not be transferred or delegated in whole or in part to another party (even if a grantee or cooperator enters into a contractual relationship with that party), unless the grant or cooperative agreement itself is transferred in whole or in part to another party by ERS.

Authorization to make changes in approved project plans, budget, period of support, etc., will be governed largely by the terms and conditions of the competitive grant award or cooperative agreement. Among other things, these terms and conditions will set forth the kinds of post-award changes that may be made by the awardee and the kinds of changes that are reserved to the PREISM Office. It is urged that all key project personnel and authorized organizational representatives read them carefully.

Release of Information

ERS receives grant and cooperative agreement proposals in confidence and will protect the confidentiality of their contents to the extent permitted by law. When a proposal results in a grant or cooperative agreement, however, it becomes part of the public record and is available to the public upon written request. Copies of proposals (including excerpts from proposals) that are not funded will not be released. Information regarding funded projects will be made available to the extent permitted under the Freedom of Information Act, the Privacy Act, and implementing USDA regulations.

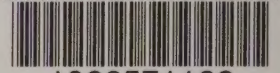
Requests to obtain authorized information (and fee schedule relating to the handling of this information) or to obtain information regarding procedures related to release of grantor cooperative agreement information should be directed to the Freedom of Information Act (FOIA) Coordinator, ARS Information Staff, 5601 Sunnyside Ave., Bldg. 1, Rm. 2248, Mail Stop 5128, Beltsville, MD 20705-5128; telephone (301) 504-1640.

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